

REMARKS

Claims 15-17 and 31-33 were withdrawn as non-elected claims. Claims 1-14 and 18-30 are pending in the instant application.

Claims 1-10, 13, 14, 18-26, 29 and 30 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Mori et al. (US Pat. No. 5,281,489) in view of Matsuura et al. (US Pub. No. 2005/0064233)

Before discussing this rejection, applicants will review claim 1 which is believed to broadly set forth the present invention. Claim 1 relates to an organic light emitting device which has a luminescent layer disposed between the anode and the cathode. The luminescent layer is made up of at least three components: a host having a mixture of an aminoanthracene and a second organic compound have dipole moment larger than that of a first component. The third component is at least one dopant.

Mori et al. teaches an organic luminescent layer which is a three component mixture containing at least one fluorescent luminescent agent (dopant), and a hole transporting material and electron transporting material. Mori et al. do not teach and applicants believe that the Examiner understands that they do not use an aminoanthracene compound as part of a host mixture. What Mori et al. do have is a tertiary aromatic amine, but there is nothing which would suggest that the Mori et al. tertiary aromatic amine should contain an anthracene nucleus. Clearly, there is no motivation in Mori et al. to use an aminoanthracene in the manner set forth in claim 1 and the other claims in this case.

The Examiner tries to combine the teachings of Matsuura et al. with Mori et al. We believe that such a combination is inappropriate. Formula (V) of Matsuura et al. may indeed include an aminoanthracene. This material is used in a light emitting layer but it is clear from a fair reading of Matsuura et al. that the compounds of formula (V) are used as a dopant. In paragraph 10 of Matsuura et al. the luminescent layer includes two components (A) and (B). The component (B) includes a number of possibilities, one of which is anthracene but it is not an aminoanthracene. Only component (A) can include an aminoanthracene. Component (A) as taught in this reference is clearly a dopant and is not a host component. Therefore, this reference actually teaches away from the present invention. It may suggest to one skilled in the art to use an aminoanthracene as a dopant but not as a host component.

The Examiner states that formula (V) discloses all of the requirements of the aminanthrcene compounds of claims 14 and 30. This may be a true statement, but the formula (V) compounds are used as luminescent dopants. Applicants are utilizing aminoanthracene compounds of the present invention as part of a host mixture, wherein the aminoanthracene, including the derivatives of claims 14 and 30, are being used strictly as charge transport materials in a host mixture. Aminoanthracenes, including the compounds in claims 14 and 30, of the present invention are not being used as light emitting materials, or dopants. Light emission is observed from the third component (the dopant) of the light emitting layer of claim 1. It is clear that Matsuura et al. use component (A), which includes compounds of formula (V), of the organic light emitting medium (see par. 23), as an emissive dopant while component (B) is selected from materials that are used as host materials. Matsuura et al. have an organic light emitting medium composed of only two materials, indicating that one material is to be used predominantly for charge transport, or as the host material while the second component must be used primarily as an exciton trap, thereby being the light emitting material, or dopant. This becomes obvious since Matsuura et al. indicates that it is preferable that the ratio of the amount by weight of component (A) to the amount by weight of component (B) is in the range of 1:99 to 20:80 (see par. 94). Component (A) is present at a significantly lower concentration versus that of component (B) within the organic light emitting medium, indicating component (A) is the light emitting center, or dopant. Furthermore, upon reviewing the examples as provided by Matsuura et al., the Examiner will note that all examples (see Examples 1-41, par. 147-164) use a ratio of component (B) to component (A) of 40:3, which indicates that Matsuura et al. are using component (A), which includes the arylamines of formula (V), as dopants. Furthermore, Matsuura et al. in their teachings of the use of compounds of component (A) of the light emitting medium, state (see par 164), “Since the anthracene derivative was used as component (B) and the diaminoanthracene derivative, the diaminopyrene derivative or the diaminochrysene derivative was used as component (A), the most excellent efficiency of light emission and life could be achieved by the devices emitting green light, blue light and pure blue light.” This further indicates that Matsuura et al. are utilizing component (A), which includes formula (V), as a light emitting dopant while component (B) is

being used as a host material. Since the compounds of formula (V) are clearly being used as dopants, it is not obvious to one of ordinary skill in the art to then use these dopants as part of a host mixture including a dopant.

Accordingly, it is believed that there is no suggestion or motivation to combine Matsuura et al. with Mori et al. Claim 1 is believed to define unobvious subject matter. Claims 2 and 18 further set forth in independent format the subject matter in claim 1. They should also be allowable for the same reasons that claim 1 is allowable. The remaining claims are in dependent format and should be allowed along with their corresponding independent base claim.

Claims 10-12 and 26-28 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Mori et al. (US Pat. No. 5,281,489) in view of Matsuura et al. (US Pub. No. 2005/0064233) and in further view of Chen et al. (US Pub. No. 2004/0247937 A1).

Mori et al. and Matsuura et al. have been discussed above. Chen et al. do indeed teach luminescent dyes including C545T and quinacridone derivatives, however Chen et al. do not teach an OLED device comprising an aminoanthracene as a host component. Since claims 10-12 depend from claim 2 and claims 26-28 depend from claim 18 these claims should be allowable along with their base claim. Upon allowance of a generic claim, applicants request that these withdrawn claims 15-17 and 31-33 be reinstated in this application.

In view of the foregoing, it is believed none of the references, taken singly or in combination, disclose the claimed invention. Accordingly, this application is believed to be in condition for allowance, the notice of which is respectfully requested.

Respectfully submitted,



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